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NOVEL BRANCHED ALPHA-CYANOSTILBENE FLUOROPHORES

This application is a 371 PCT/KR02/01245 filed on 06/09/2002.

TECHNICAL FIELD

The present invention relates to novel branched fluorescent materials having a
5 α -cyanostilbene core structure, which can variously tune the fluorescent colors of red,
green and blue.

BACKGROUND ART

Recently, the organic EL element has been attracted considerable attention as a
10 most suitable material for the flat panel display (FPD) having high brightness. Under this
trend, a lot of the researches and developments have been carried out vigorously. The
organic EL element has a structure wherein the luminescent layer is inserted between the
two electrodes. The hole streaming in the anode positively charged recombines with the
electron flowing in from the cathode negatively charged in the luminescent layer to
15 become finally luminescent. The both materials of high molecular and low molecular can
all be utilized to the production of the organic EL element. The both of them are proved
to provide the organic EL element having high brightness.

The organic EL element is divided broadly into the two types. The one forms
the luminescent layer by the use of the materials comprising the fluorescence dye to
20 transporting the charges (See Journal of the Applied Physics, 65, 3610, 1989). The other
utilizes the luminescence dye per se as the luminescent layer (See Japanese Journal of the
Applied Physics, 27, L269, 1988).

The organic EL element utilizing the luminescence dye per se as the luminescent
layer is further divided into the following three types. The first one is the three layers
25 element wherein the luminescent layer is inserted between the hole transporting layer and
the electron transporting layer, the second one is the two layers element wherein the hole
transporting layer and the luminescent layer are laminated to the other one, and the third
one is the two layers element wherein the electron transporting layer and the luminescent
layer are laminated to the other one. So, the organic EL element has been known as
30 exhibiting the improved luminescence efficiency in case that it consists of two or three